

Design Exception #4 Reducing the Roadway Median Width

Design Exception Statement

Reduce the median width from MP 184.8 to 185.3, MP 186.9 to 187.4, and MP 188.9 to 190.1 to improve safety, to reduce wall area, to lessen impacts to the trail, forested areas, Black Gore Creek, Black Lake No. 1, to maintain effective wildlife crossing lengths, and to minimize disturbance areas.

Process

A presentation was made to the Design Exception Issue Task Force at Meeting #4 on August 2, 2021. Two Design Exceptions were presented at this meeting.

The Design Exception process was reviewed by the Project Leadership Team on August 6, 2021. Meeting notes document their agreement that the CSS process was followed.

This Design Exception is the result of refinements to the EA alignment to minimize or eliminate design exceptions and meet the Aesthetic Guidelines. Further, the alignment refinements worked to minimize the cut walls in favor of fill walls. With all this work there remained median reduction design exceptions along the roadway alignment.

Reasoning for this Design Exception included the following:

- Matching the existing outside edge of pavement and widening 14 feet into the median is consistent with the roadway geometry.
- This alignment allows the existing truck parking to remain in place.

The Design Exception Team agreed to forward their recommendation to the Project Leadership Team supporting the reduction in the median width.

At the Project Leadership Team #9 held on August 6, 2021, the TT recommendation was presented, the PLT reviewed the process used and agreed that the CSS guidance had been followed.

Documentation for this Design Exception

- Design Exception ITF Meeting #4 presentation August 2, 2021
- Design Exception ITF #3 Meeting Notes
- Project Leadership Team Meeting #9 presentation
- Project Leadership Team Meeting #9 notes



Summary of Design Exception ITF Aesthetic Concern and the Design Team's Approach

Safety Concern - Headlight glare with reduced median width

Design Plan, Specifications, and Field Supervision to address the concern -Designers have introduced a vertical separation between eastbound and westbound traffic to reduce glare. Additionally, 54-inch glare screen will be installed where needed.





COLORADO Department of Transportation

I-70 West Vail Pass Safety and Operations Improvements



Issue Task Force Design Exceptions Meeting # 3 August 2, 2021



Design Exception from MP184.8 - 185.3 EB and WB

• Changes to the EA:

EA did not have a design exception at this location. Adding the WB bridge to the INFRA scope

 What does the design exception achieve?
 Improve safety by increasing curve radius and maintaining design speed consistency
 During construction this design keeps 170 open to

traffic

• What option(s) were analyzed?

A 1,200-foot bridge within 14 feet of Gore Creek requiring a modification to the existing fill wall

Design Exception from MP184.8 - 185.3 EB and WB



Design Option from MP184.8 - 185.3





Design Exception from MP184.8 - 185.3 EB and WB

- Reducing the existing median width reduces the impact to Black Gore Creek and forested areas to the south.
- Shifting the EB bridge to the north reduces costs by \$23M by reducing the bridge length and wall height.
- Extending the barrier a quarter of mile is consistent with next 4 miles of barrier separated roadway

This change does not preclude the AGS alignment



Design Exception from MP186.9 to 187.4 EB and WB

- EA showed elimination of the entire medium
- What does the design exception achieve?
 - By matching the existing outside edge of pavement and widening 14' into the median is consistent with the roadway geometry.
 - Shoulder widening improves the safe operation of the highway when breakdowns occur.
- What options were analyzed?
 - Widening to the north and to the south

Design Exception from MP 186.9 to 187.4 EB and WB





Design Exception from MP 186.9 to 187.4 EB and WB

- MP 187.3 is a proposed wildlife underpass and narrowing the median minimizes the length of the wildlife crossing, maximizing its efficiency.
- Widening to the north or south would increase the disturbance area and impact forested areas
- This change does not preclude the AGS alignment



Design Exception from MP 188.0 to 190.1 EB and WB

• Changes to the EA:

Extending the limits of the design exception to accommodate the aux lane from truck parking to MP190

• What does this design exception achieve?

Matching the existing outside edge of pavement and widening 14' into the median is consistent with the roadway geometry.

This alignment allows the existing truck parking to remain in place.

• What options were analyzed?

Widening to the south

Design Exception from MP 188.0 to 190.1



Exhibit C (1 of 3)-Context Sensitive Solution Median Design Exception Mile Post 188.8 to 190 07-20-2021



Design Exception from MP 188.0 to 190.1

MP 188.8 to MP 189.7, Proposed Eastbound Design Matches Existing Outside Edge of Pavement to Limit Slope Impacts to Forested Slide Slopes or Existing Truck Parking.

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I-70 WB Future Alignment Matches Existing Inside Edge of Pavement

Exist Truck Parking

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Widening to the Outside would Require Reconfiguration of the existing Truck Parking and require additional Walls

14' of Typical Widening Into Existing Grass Median MP 189.7 to MP 189.9 - Median Widening and Outside Widening to Accommodate Climbing Lane and Aux Lane between Truck Parking and Exit 190

Existing Blake Lake Road

Design Balances Impacts to Existing Median while Not Impacting the Existing Grading to Black Lake Road

Eastbound Outside Widening Optimized to Limit Slope Impacts to the Existing Steep Side Slopes to Black Lake Road

> Proposed Proposed Proposed EB Lose EB Lose EB Lose

18' Median

Reduction

79' Existing Median

Exhibit C (2 of 3)-Context Sensitive Solution Median Design Exception Mile Post 188.8 to 190.1 07-20-2021

1-70 WB Future Alignment and 3 Lane Construction

Design Exception from MP 188.0 to 190.1





Design Exception from MP 188.0 to 190.1 EB and WB

- Widening to the south would push the truck parking toward Black Lake No. 1 and the forested buffer between the parking and lake would be reduced.
- This change does not preclude the AGS alignment.



Design Exception for Reduction of Medians

Reduce the median width from MP 184.8 to 185.3, MP 186.9 to 187.4, and MP 188.9 to 190.1 to improve safety, to reduce wall area, to lessen impacts to the trail, forested areas, Black Gore Creek, Black Lake No. 1 and to minimize disturbance areas.



COLORADO

Department of Transportation

23982-23929 I-70 West Vail Pass Safety and Operations Improvements Meeting Notes

Date: August 23, 2021

Purpose:

Issue Task Force (ITF) Design Exception Meeting #4

Location:

Online Google Meet Meeting

Attending:

Attendance list:

- John Kronholm, Project Manager, CDOT Region 3
- Karen Berdoulay, Resident Engineer, CDOT Region 3
- Matt Figgs, Project Manager, CDOT Region 3
- James Proctor, CDOT Bridge Enterprise
- Lisa Schoch, CDOT Historian
- Carol Huey, US Forest Service
- Taylor Elm, DNR
- Greg Hall, Town of Vail
- Dick Cleveland, Town of Vail
- Chad Salli, Town of Vail
- Kevin Sharkey, ECO Trails
- Siri Roman, ERWSD
- Len Wright, PhD, ERWSD
- Larissa Read, ERWSD
- Tracy Sakaguchi, Colorado Motor Carriers
- Shannon Anderson, Bicycle Colorado
- Brian Hearn, R S & H
- Jeb Sloan, R S & H
- Mary Jo Vobejda, Jacobs
- Jim Clarke, Jacobs
- Candice De, Jacobs
- Loretta LaRiviere, Jacobs

Summary of Discussion:

The following is a summary of the subjects discussed during the meeting.

1) Introductions & Meeting Purpose.

Mary Jo explained that Design Exceptions are allowed to help balance a variety of issues. The Design Exceptions we will be talking about today are to protect the environment. We are trying to lessen the footprint to avoid existing vegetation at the MP 185 wall and along the recreation trail. We will review with you and then we'd like to hear back you're your recommendation as to whether we move forward with these exceptions.

2) Cut Wall at MP 185

- a) Brian said just west of the bridge reconstructions we are pushing into the existing hill towards the old US 6 trail. We have a cut wall on the westbound side that is pushed off the edge of pavement and then above that we have the old US 6 trail relocation. What we're trying to do is use a 2:1 slope to minimize the grading impacts and heights of those walls. You can see on the graphic the wall as you come down the westbound lanes turning the corner on the bridge so what we're trying to do is to keep that limited to a two-tiered cut wall and then limit the length of the cut wall along the US 6 trail.
 - i) By utilizing the 2:1 slopes we gain a lot of benefit by tightening up the limits of those old US 6 relocations and again limiting how far back we chase our cut slopes.
 - ii) By doing the 2:1 slope, US 6 just has a two-tiered short wall, somewhere around 150 feet long. This area is probably going to be pretty sensitive to the final survey when we look at the topo versus what is in our existing high-level survey now.
 - iii) This is going to be very similar to the cut wall typical section we have further down the project at MP 187 where proposed bottom of the wall is shifted and we were able to have a 23-foot ditch in the INFRA project and by the time we get our future shoulder built out we would have an 11-foot offset from the edge of pavement to the bottom of the barrier and another 4 feet to the bottom of the wall.
 - iv) The I-70 walls is going to be limited to two 10-foot tiers and we would like to chase that slope with a 2:1 slope instead a 2.5:1 slope. That saves us about 4 feet depending on where the alignment and the trail profile on US 6. The higher we can pull that trail profile up for US 6, the shorter the walls can be, and less impact on US 6.



- v) From the old US 6 Trail we are keeping the same trail width that is out there today with a 20-foot width and keep a 5-foot shoulder down to the 2:1 slopes. There is a sizable existing ditch, so we'd go ahead and keep a little bit bigger of a ditch than we were showing for other cut wall situations. We are just trying to convey drainage in front of the trail.
- vi) Most of the length of the trail we have just the 2:1 cut slope again coming back up and with the length of the cut slopes it really saved a significant amount of forest impacts and limited the amount of wall needed. To sum it up, we are trying to limit the wall heights and limit the forested impacts by using the 2:1 slopes. With the lengths and offsets, we have from the old US 6, the 2:1 provided a big benefit by reducing impacts to forested areas.
- vii)By doing the 2:1 slopes we will reduce the aesthetic impacts and reduce the relocated trail length. Miller Creek Slide is a named slide, so we are trying to limit how far out into that we are cutting.
 - Dick said he went out to look at where the US 6 highway would be relocated. From a laymen's perspective, it looked like the trail at MP 185 is on a very steep hillside and it would be significant to cut that corner. Have you looked at that yet or have sufficient topos to do that at this point?

Brian said we can't get the trail high enough to overcome all the grade. We are widening into an existing steep slope so pushing it out helps gain some of that grade and it's a pretty straight-line grade. I'm sure we didn't get over 10% in trying to optimize that profile.

Brian said the alignment of the trail on the right side of the bridge swings out a little bit more and provides a consistent radius out to the pinch point at the existing wall to the south. And to limit the maximum grade we have pulled away from the existing trail and down the hill just a little bit to help keep that profile grade under 10%. That wall also provides a greater separation from eastbound I-70.

 Greg said I know when we were talking about the roadway design and the bridges, you said the bridges were about 10 feet apart or parallel and then there was a space when you go to your section, it does not look like we have any kind of median.

Brian said it is shown incorrectly. On the westbound side we have the 6-foot inside shoulder and there will be a little bit more of an offset. We are working through the details of whether we need to have barrier on eastbound and westbound individually or whether we can have that CD barrier in the middle. There will be just a little bit of an open median



through this section. This will be updated to show further separation as there is actually 8 to 9 feet in there.

• Greg asked for clarification that the Design Exception is a grading exception, not a wall exception.

Brian confirmed a grading exception is what we are requesting. To reduce the walls, we would like to use the 2:1 slopes grading design exception.

b) Mary Jo noted the range we chose is not exact. The slopes look better when they undulate. We are looking for a slope range that would give the designers flexibility. The design exception we are recommending is:

Use slopes ranging from 2.5:1 to 1.8:1 as directed by the project Landscape Architect to create a slope that fits into the adjacent landform, looks natural, sustains vegetation and is maintainable.

3) Recreation Trail Design Exception

- a) Candice said one of the challenges with the recreation trail is the existing slopes are steep at 2:1. What we found in a quick analyses is that almost 30% of our proposed slopes are 2:1 instead of the preferred 2.5:1. If we don't use a 2:1 slope in the design, our retaining walls almost double. Using 2:1 slopes help keep the cost down quite a bit for the retaining walls. Obviously the walls have the least environmental footprint, but they cost more.
 - i) Candice said you might be thinking, why don't you just bring the profile up to eliminate that? We've thought a lot about it ourselves but because of the overall elevation gain from the starting point to the ending point we have some very steep profile grades. We are trying to navigate the existing steep slopes with proposed slopes with retaining walls. Generally, those 2:1 slopes are approaching the retaining walls or bridges. That is where we are proposing to use the 2:1 slopes.
 - ii) During our field visit we learned a lot and we will continue to evolve the alignment. In the area approaching Bridge 1 we looked at shifting the alignment a little further down the slope and that allowed some of these 2:1 slopes to be eliminated.
 - iii) We've got some cut walls going down towards the creek and others approaching the bridge. Some of the bridge grading will be refined once we get the bridge abutment set and know what the grading all around the abutment and wing walls look like.
 - iv) There are also some cut walls between the rec path and I-70 and the 2:1 slope Design Exception allows a slope instead of a retaining wall with some



cut instead of walls the entire length. This is another area we looked at in the field that we might be adjusting based on the existing topography.

Jim said we were out on the wetland field visit updating the EA boundaries and they are changing a bit so there will probably be some minor refinements in the design to account for this.

- v) Candice said there is a long cut wall where we won't have 2:1 slopes. We're just trying to tie into existing hillside and minimize the height of the cut wall.
- vi) 2:1 slopes will be used to stay further away from the highway in some locations. We will use an offset barrier in some locations to make sure we tie in at the barrier locations. The proposed slopes will be used to try to catch the tie in points where we have steep grades.
- b) Mary Jo reviewed the mitigations measures that we have talked about with the truck ramps, and these are all things the landscape architect and designers will consider as ways to break up the slopes:
 - Boulder could be used to break up slope with random placement
 - Logs and Stumps to reflect natural conditions
 - Trees will be a plant mixture of diverse sizes
 - Landscaping will use native ecosystem species with mat groundcovers and spray on blankets, bonded fiber matrix

Mary Jo acknowledged these don't lessen the steepness of the slopes being proposed to you right now. But there are ways to mitigate so the slopes have a different appearance and that helps with the type of vegetation that can survive. The main reason the Design Exception is recommended for 2.5:1 slopes versus 2:1 slopes is that 2.5:1 slopes are easier to revegetate.

c) Mary Jo noted the Recreation Trail Design Exception is the same Design Exception for the cut walls:

Use slopes ranging from 2.5:1 to 1.8:1 as directed by the project Landscape Architect to create a slope that fits into the adjacent landform, looks natural, sustains vegetation and is maintainable.

i) Greg said the existing slopes from the interstate down, irrigation could be put in to really establish revegetation on the steeper slopes. He has a project that is putting in a lot of temporary irrigation. It seems with summers getting warmer, we can get vegetation to re-establish better on steep slopes with irrigation.



Candice said the slopes vary. Some are 3;1, some are 2:1 and some are steeper than 2:1.

Karen said we haven't gotten that far in the landscaping design yet. Traditionally if it is 2:1 or steeper we put a blanket down on top of seeding. There is no water source so it will have to be completely portable and could be quite challenging.

Matt said we are a little far out to be having detailed discussions on this, but we have talked about it quite a bit. Getting the seed to establish is really important in holding the slopes.

ii) Greg said that's the hard part when you go to 2:1. You're kind of in a catch 22 situation. You use a steeper slope and put the protection on there but if your seeding doesn't take, it's really hard to reseed it a second time to get it to take. That would be my concern about these design exceptions.

John said he has seen some great results in the valley seeding and grass growing with the cold air blankets on steeper slopes. We put the onus on the contractor, but the state holds the SWMP Permit and is responsible to get the vegetation to come back so one way or another vegetation gets reestablished.

Karen said a lot of the trail will be built in 2022 but we will be constructing through 2024 and will have a landscape period after that. It's usually a year to make sure everything is established so this is a little different than a typical project.

We can't close our SWMP permit until we get 80% of the disturbance area has established vegetation. We then transfer that permit to maintenance. They have the ability to contract to pay additional funds for additional seeding which we've had to do on other projects. There is a way to do it regardless of who pays for it. We'll be up there for a while so we'll definitely have time, and we will have a landscape warranty period like we had on Vail Underpass.

d) Mary Jo asked if anyone objects to these design exceptions or if there was anything you would like us to change in the text to better address any of the concerns that have been brought up.

Hearing no objections or language change suggestions, Mary Jo said we will move forward with the assumption that everyone is comfortable with these slope design exceptions and with the PLT approval, our designers will move forward using these design exceptions.

i) Carole said she wants the caveat of running this by the Forest Service staff for a quick review because the bike path location has changed a little big



even though it is in the EA project area and she also wanted to share the wall information. She will forward the presentation to staff and request a five-day turnaround for comments and report back to CDOT that it has been reviewed.

ii) Dick asked since this project is going to be constructed over a three-year period, will early phases like the recreation trail landscaping begin when that portion is completed, or will it not be done until the final year?

Karen said we will revegetate the projects as they are completed but detailed landscaping like adding trees and planting in certain areas, will all be done at once. We will bring in the specialist at the end of the project to ensure the landscaping is right for the area.

iii) Greg said he noticed on the wall sections you are using the flat panel and not the scallop. Has the final decision been made to use the modified scallop or is it still being discussed?

Karen said we are planning to use the scallop in the medians if the wall is visible from the roadway but if it is below the roadway we are planning to use a flat panel and on the recreation path we will consider using some more natural looking rock type walls.

We took the tremendous feedback we received about checking the existing scalloped walls. Our team has talked about scalloped walls more than we ever thought we would. We are making progress and we should have some information back for the team in the next few weeks. We are learning new things and looking at different options for the full scallop and the modified scallop, so the decision has not been made. We all see our projects through our own lens, and everyone has different experiences and the more we hear back from everyone, the more it helps to make a better project in the end.

- iv) Mary Jo said Margaret Mead once said "never doubt the power of a small, committed group of citizens to change the world. It is in fact the only thing that ever has." You do make a difference, it does affect how the designs come out so you should all be really proud of yourselves. This team has really taken this scallop wall issue to heart.
- v) Kevin commented in the chat box: Great job on defining the design exceptions and walking through the recreation trail design. I appreciate all of the work done to date in terms of keeping us informed, collecting input, and updating the design. I believe the final product will be great!



4) Next Steps

- ALIVE ITF meeting September 13th and it should be the final meeting.
- SWEEP ITF Meeting is September 16^{th,} and the field trip is September 27th
- There were no substantial comments received on the Aesthetic Guidance, so we do not anticipate this ITF will meet again unless there are substantial changes that need to be reviewed for 106 compliance.
- Project Groundbreaking August 25th (in person)
- TT Field Trip has been scheduled for morning of September 27th
- TT Meetings invites sent out for October, November, and December
- The September PLT Meeting has been rescheduled to November 12th







COLORADO Department of Transportation I-70 West Vail Pass Safety and Operations Improvements



Project Leadership Team Design Exceptions Meeting # 9 August 6, 2021



Design Exception

... Design exceptions may assist a designer in finding a transportation solution that balances impacts to scenic, historic, and culturally or environmentally sensitive area while still providing for safety and mobility...

- 1. Complementing surrounding physical characteristics
- 2. Enhancing safety
- 3. Increasing capacity
- 4. Reducing costs
- 5. Protecting the environment
- 6. Preserving historic and scenic elements
- 7. Interfacing with multiple modes of transportation
- 8. Utilizing new technology or innovative approaches
- 9. Doing the right thing





Design Exception from MP 188.0 to 190.1

I-70 WB Future Alignment Matches Existing Inside Edge of Pavement

> I-70 WB Future Alignment and 3 Lane Construction



14' of Typical Widening Into Existing Grass Median

 6'
 12'
 12'
 12'
 10'

 B
 Cone
 25
 10'

 14'
 Typical Reduction In Existing Median Width
 14'
 Typical Reduction In Existing Median Width

Exhibit C (1 of 3)-Context Sensitive Solution Median Design Exception Mile Post 188.8 to 190 07-20-2021

WB 2-Lane Construction

Cross Section Mile Post 189 - Typical of MP 188.8 to 189.7



Design Exception from MP 188.0 to 190.1

-70 WB Future Alignment Matches Existing Inside Edge of Pavement 1-70 WB Future Alignment and 3 Lane Construction Exist Truck Parking stbound I-70 Existing Blake Lake Road MP 189.7 to MP 189.9 - Median Widening and Outside Widening to Accommodate Climbing Lane and Aux Lane between Truck Parking and MP 188.8 to MP 189.7. Proposed Eastbound Exit 190 Design Matches Existing Outside Edge of Pavement to Limit Slope Impacts to Forested Design Balances Impacts to Existing Median Slide Slopes or Existing Truck Parking. while Not Impacting the Existing Grading to Black Lake Road Widening to the Outside would Require Reconfiguration of the existing Truck Parking and require additional Walls 14' of Typical Widening Into Existing Grass Median Eastbound Outside Widening Optimized to Limit Slope Impacts to the Existing Steep Side Slopes to Black Lake Road Exhibit C (2 of 3)-Context Sensitive Solution 18' Median Median Design Exception Reduction Mile Post 188.8 to 190.1 79' Existing Median 07-20-2021



Design Exception from MP 188.0 to 190.1

MP 189.7 to MP 189.9 - Median Widening and Outside Widening to Accommodate Climbing Lane and Aux Lane between Truck Parking and Exit 190

Existing Blake Lake Road

Design Balances Impacts to Existing Median while Not Impacting the Existing Grading to Black Lake Road

Exhibit C (3 of 3)-Context Sensitive Solution Median Design Exception Mile Post 188.8 to 190.1 07-20-2021 MP 190 - Match Existing Off-Ramp Gore to Exit 190

> MP 190.1 -End Reduced Median CSS Design Exception.

Match Existing Alignment Under Bridge at Exit 190

End Eastbound Climbing Lane



Design Exception Recommendations

Roadway Median Width Reduction

Reduce the median width from MP 188.9 to 190.1 to improve safety, to reduce wall area, to lessen impacts to the trail, forested areas, Black Gore Creek, Black Lake No. 1, to maintain effective wildlife crossing lengths, and to minimize disturbance areas.



COLORADO

Department of Transportation

23982-23929 I-70 West Vail Pass Safety and Operations Improvements Meeting Notes

Date: August 6, 2021

Purpose:

Project Leadership Team (PLT) Meeting #9

Location:

Online Google Meet Meeting

Attending:

Attendance list:

- John Kronholm, Project Manager, CDOT Region 3
- Karen Berdoulay, Resident Engineer, CDOT Region 3
- David Cesark, CDOT Region 3 Environmental Manager
- Zane Znamenacek, CDOT Region 3 Traffic Program Engineer
- Matt Figgs, CDOT Region 3
- Greg Hall, Town of Vail
- Pete Wadden, Town of Vail
- Dick Cleveland, Town of Vail
- Ben Gerdes, Eagle County
- Robert Jacobs, Summit County
- Tracy Sakaguchi, Colorado Motor Carriers
- Randal Lapsley, R S & H
- Jim Clarke, Jacobs
- Mary Jo Vobejda, Jacobs
- Loretta LaRiviere, Jacobs

Summary of Discussion:

The following is a summary of the subjects discussed during the meeting.

1) Introductions & Meeting Purpose

Karen began the meeting by introducing the PLT attendees' names and organizations.



2) Design Exception Review of CAP 1 Design Refinement Process

Mary Jo said there is design criteria specific to the I-70 Mountain Corridor. Design Exceptions are allowed in areas where you can't meet the design criteria. There is a process a designer needs to go through that requires they look at a balance between all the different core values: scenic, historic, cultural, environment. All design exceptions must provide safety and mobility.

We have been looking at complementing the physical characteristics. Most of the slopes in the valley are at 2:1. This is a physical characteristic and it is just about impossible to chase it with a shallower slope and to make it work, we have to do something different. Sometimes it's a wall but we don't want to build walls everywhere.

The other factor is protecting the environment. As you chase these slopes or realign the recreation trail we would impact forested areas, wetlands, and other sensitive environmental areas.

- a) We asked for support for a design exception at the lower truck ramp. The design criteria requires a 2.5:1 slope and in this area the existing slope is 2:1. If you try to put a slope at 2.5:1, the two never meet and you just push this higher up the slope or you end up with a big wall that perhaps you could avoid. In this particular case, we do have a wall on the uphill side of the truck ramp in some locations. One of our other goals with the truck ramp was to cover up this concrete barrier with slope so that it wouldn't be seen from the interstate. We presented options:
 - Use boulders with a 2.5:1 to 2:1 slope to limit exposed barriers. Some of the barrier would be expose.
 - Use a 2.5:1 slope and leave up to 3 feet of exposed barrier
 - Use varying slopes as steep as 1.3:1 to eliminate exposed barriers which is pretty steep and difficult to keep vegetation growing, keep it from sluffing. Any time you could see the barrier, it could be screened with boulders and vegetation.

The Design Exception ITF agreed that we should be able to use slopes greater than 2.5:1. We talked about how that would happen with the input of the landscape architect and landscape plan at locations where boulders and other techniques can be used to achieve revegetation.

b) The second Design Exception meeting was earlier this week and we asked for support for median reductions. The design criteria state you cannot reduce the width of the median. When we looked at trying to balance of all of the issues such as disturbance area, impacts to wetlands and impacts to the trail, we



found that narrowing the median in certain locations is really the optimal option for the roadway design.

i) The first area for an exception is between MP 184.8 & MP 185.3 where our designers came up with a great idea to completely move the bridges to the north and rebuild both east and westbound. It provides a much better traffic solution and saves money on the corridor, but it does reduce the median.

Karen said this is in an area where there is a section of I-70 that the east and westbound is at the same level with very little median so we're just extending the section of highway that will have very little median.

What drove this design was really to pull the eastbound bridge away from Black Gore Creek and also to be able to build much shorter bridges we're moving everything to the north. The reason they're closer together is the way the phasing works. We would build the new westbound bridge first before moving it to its new configuration and that required the eastbound bridge to be really tight up against the westbound bridge. We also had to meet design standards for the radius of the roadway. Our justification for this is we are much further away from the creek so we're protecting those environmentally sensitive areas in the Corridor.

ii) Karen said the second median reduction exception is between MP 186.9 and MP 187.4 Karen said one of the drivers in this location is we have a larger wildlife crossing on the east end and it's really important to keep those as short as possible. In this platform it was tricky trying to feather it in so there aren't impacts to the recreation trail on the south side. It just makes sense to widen into the median.

John said because we are adding a third lane and the designers held the edge of asphalt on the southern side there is less disturbance overall and fewer walls. It ties into the wildlife crossing which we have reduced the length by about 10 feet from the EA concept. Having no median here helps keep it shorter and that's true in a couple of the other wildlife crossings as well.

iii) The third design exception is from MP 188.0 to MP 190.1. In this area we are holding the southern edge of pavement and widening into the median. It protects the slope, and the forested areas and we didn't want to get any closer to Black Lake. John said it will leave room for water quality features on the south side in those areas where we are still refining and designing right now. There is also another wildlife crossing that is in the area.

As we move farther long, if we push the roadway further south it generates larger and larger walls for the future truck parking expansion and push it farther into the forested area. Widening into the median helps to reduce that. John said they met with the Forest Service extensively throughout this process and they don't want us to encroach onto Black Lakes Road because that's currently where they have all their winter recreation parking. They park there for the summer as well, but it doesn't fill up as much. They wanted us to stay away from there for snow storage and to make sure they don't lose any parking.

3) Design Exception Recommendations

a) Mary Jo said the Design Exception ITF has agreed to and they are making recommendation going forward that for the Truck Ramp:

Use slopes ranging from 2.5:1 to 1.8:1 as directed by the project Landscape Architect to create a slope that fits into the adjacent landform, looks natural, sustains vegetation and is maintainable.

We did put this in the hands of the project landscape architect because it is a requirement for all of these projects to have a landscape plan. Obviously the landscape architect is not making these decisions alone, but they are the ultimate producer and designer of the landscape plan. They are working with everybody to see if there are other ways to minimize these impacts before we go to a steeper slope. But ultimately it is captured and codified on the landscape plan.

b) The second recommendation the ITF gave us and agreed to (with the amended orange text) for the Roadway Median Width Reductions.

Reduce the median width from MP 184.8 to 185.3, MP 186.9 to 187.4, and MP 188.9 to 190.1 to improve safety, to reduce wall area, to lessen impacts to the trail, forested areas, Black Gore Creek, Black Lake No. 1, to maintain effective wildlife crossing lengths, and to minimize disturbance areas.

We looked at the existing conditions and the environment. We balanced all the pieces of it so there were options and we planned for the future by seeing what the future widening would look like and brought that into consideration along with all the pieces of the design and everything that represents a core value and came up with this as the best balance possible.

One request from the group was to consider widening the median in one of the stretches between MP 184.8 & MP 185.3. We looked at it and it's just not feasible because this is where bridges are being moved and they have to stay together.

We were asked to incorporate glare protection and that is being incorporated into the design, this is a part of the design considerations.



We have been asked to check where the AGS alignment will be constructed to be certain where are proposing narrowing the medians is not precluding or impacting the AGS alignment. That check is underway right now.

Mary Jo said the PLT's job is to help us ensure and weigh in on if we followed the CSS guidelines. We really want to be sure we have followed the Context Sensitive Solutions systems and guidelines and that these recommendation are valid in the process that we have all agreed upon. Not that these are the best solutions. Let us know if we have followed the process.

- Greg said we have followed the process and we've balanced all of the issues. I'll probably go offline on the bridge portion to understand why it is not feasible and maybe I was not explaining myself.
- ii) Greg said he thinks the other bigger issue is if you just add up the median reductions using the mileposts, that's 2.3 miles which is 23% of 10 miles. It's a 0.25 mile here and a 0.5 mile there and now we will have 7 miles of continuous median and that starts to take away from the Pass. There is a reason why this design criteria was put in. I think the design team has done a great job of really balancing but just be cautious this is just the uphill eastbound only design and we have a lot of design to go over the years. I think when there is widened medians, we have the ability to go 10 feet but when we're going down and reducing any kind of green space and extending the barrier that is already there we have to be cautious.

Mary Jo said she agrees, that is one of the real challenges of this Corridor and many other designs. It is easy to say, oh well, this is just a little bit here and there and then in the end you have a cumulative impact. I have watched this design team and they have balanced all the issues. They have also considered the future so that when the additional widening of east or westbound happens, there won't be additional design exceptions. That's already been considered into these exceptions and I really applaud them for that.

There were no objections to either design exception.

